U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

MAR 16 2001

DOT-E 12130
(SECOND REVISION)

EXPIRATION DATE: January 31, 2003

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: FIBA Technologies, Inc.
Westboro, MA

2. PURPOSE AND LIMITATIONS:

a. This exemption authorizes the manufacture, marking, sale and use of a non-DOT specification vacuum insulated portable tank conforming with all regulations applicable to a DOT Specification MC 338 cargo tank motor vehicle, except as specified herein, for the transportation in commerce of the materials authorized by this exemption. This exemption provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.

b. The safety analyses performed in development of this exemption only considered the hazards and risks associated with transportation in commerce.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.315(c)(1), 173.318, and 176.76(g) in that a non-DOT specification portable tank is not authorized except as prescribed herein.

5. BASIS: This exemption is based on the application of FIBA Technologies, Inc. dated May 19, 2000, submitted in accordance with § 107.105 and the public proceeding thereon, February 16, 2001 submitted in accordance with § 107.109 and supplemental information dated March 15, 2001.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Proper Shipping Name/ Hazardous Material Description	Hazard Class/ Division	Identification Number
Carbon dioxide, refrigerated liquid	2.2	UN2187
Argon, refrigerated liquid *(cryogenic liquid)*	2.2	UN1951
Nitrogen, refrigerated liquid *(cryogenic liquid)*	2.2	UN1977
Oxygen, refrigerated liquid *(Cryogenic liquid)*	2.2	UN1073

7. SAFETY CONTROL MEASURES:

a. PACKAGING -

(1) Packaging prescribed is a non-DOT specification portable tank designed, constructed and "U" stamped in accordance with Section VIII, Division 1 of the ASME Code. The portable tank is vacuum insulated and is enclosed in an ISO frame. The portable tank must conform to FIBA Technologies drawing VS-CO2-17P-01 Rev 02, VS-HDS-4220-01 dated 5/2/00 and VS-HDS-4220-02 dated 5/4/00, and related drawings and calculations on file with the Office of Hazardous Materials Exemptions and Approvals (OHMEA). The design criteria for the inner tank are as follows:

Lading:	Carbon dioxide	Argon, Nitrogen or Oxygen
Design Pressure	24.13 bar (350 psig)	17.24 bar (250 psig)
Temperature	-40°C to 93°C (-40°F to 200°F)	-195°C (-320°F)
Water Capacity	15,974 liters (4,220 US gals)	15,974 liters (4,220 US gals)
Head and Shell material	SA 612N	SA 240 304

Minimum Head thickness	18.33 mm (0.722 in)	14.44 mm (0.5687 in)
Minimum Shell thickness	18.51 mm (0.729 in)	14.55 mm (0.5729 in)
Inside diameter	1981 mm (78 inches)	1981 mm (78 inches)
Overall length	5550 mm (218.4 inches)	5550 mm (218.4 inches)

(2) Additionally, each tank must conform to the requirements contained in § 178.338 except as follows:

§ 178.338-2 Material.

* * *

(c) Impact testing is not required.

* * *

§ 178.338-6 Manholes.

(a) Each portable tank must be provided with an inspection access hole (manhole) of not less than 18 inches (456 mm) diameter. After a final inspection, the access hole must be closed by welding using a suitable access cover plate fabricated from the same material as the tank. The tank must be provided with a means of entrance and exit through the jacket, or the jacket must be marked to indicate the access hole location.

§ 178.338-9 Holding Time.

(a) In lieu of tests, holding times have been established by calculation for the following materials:

Carbon dioxide - 45 days

Argon - 43 days

Nitrogen - 38 days

Oxygen - 57 days

(b) Not applicable

(c) Not applicable

§ 178.338-10 Collision damage protection. This section does not apply.

§ 178.338-13 Supports and anchoring.

(a) * * *

(b), (c) The portable tank need not conform to § 178.338-13(b) or (c). The portable tank must meet the definition of "container" specified in 49 CFR 450.3(a) and must fully comply with the applicable provisions of 49 CFR parts 450-453, and each design must be qualified in accordance with § 178.270-13(c).

b. TESTING - Each tank must be reinspected and retested once every five years in accordance with the procedure prescribed in § 173.32(e) for DOT Specification 51 portable tanks. The test pressure for the inner tank must be determined by the following formulas:

If there is no vacuum in the outer jacket during the test:

$$P_T = 1.25 \times P_d$$

If vacuum exists in the outer jacket during test:

$$P_T = [1.25 \times P_d] - 14.7$$

Where:

P_T = Test pressure, psig

P_d = Design pressure (the sum of the maximum allowable working pressure, liquid head and 14.7 psi)

c. OPERATIONAL CONTROLS -

(1) Each portable tank must be prepared and shipped as required in 49 CFR 173.318, as applicable for the lading.

(2) Shipments by cargo vessel must conform with the following:

(i) The package must conform with § 176.76(g). Portable tanks may be over stowed only if enclosed in ISO-type frames and otherwise suitably protected. Portable tanks must be stowed such that they are readily accessible and can be monitored in accordance with the provisions of this exemption.

(ii) The legend "One-Way Travel Time _____ Hours" or "OWTT _____ Hours" must be marked on the shipping paper and on the dangerous cargo manifest immediately after the container description. The OWTT is determined by the formula:

OWTT = MRHT - 24 hours.

(iii) A written record of the portable tank's pressure and ambient (outside) temperature at the following times must be prepared for each shipment.

(A) At the start of each trip;

(B) Immediately before and after any manual venting;

(C) At least every 24 hours; and

(D) At the destination point.

(iv) Any lading road relief valve set at a pressure lower than that prescribed for the (safety) pressure relief valve must be closed during transportation by cargo vessel unless the holding time was determined based on the setting of the pressure control valve.

(3) No person may transport or offer for transportation a charged portable tank unless the pressure of the lading is equal to or less than that used to determine the marked rated holding time MRHT and the OWTT is equal to or greater than the elapsed time between the start and termination of travel.

(4) The actual holding time for each tank must be determined after each shipment. If it is determined that the actual holding time is less than 90 percent of the MRHT of the tank, the tank may not be refilled until it is restored to its MRHT or the tank is re-marked with the reduced holding time determined by this examination.

(5) The holding time and the MRHT of the first portable tank must be determined and results thereof must be submitted to OHMEA prior to initial shipment.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this exemption for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this exemption.

b. A person who is not a holder of this exemption, but receives a package covered by this exemption, may reoffer it for transportation provided no modifications or changes are made to the package and it is offered for transportation in conformance with this exemption and the HMR.

c. A current copy of this exemption must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this exemption must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Exemptions and Approvals for a specific manufacturing facility.

e. A current copy of this exemption must be maintained at each facility where the package is manufactured under this exemption. It must be made available to a DOT representative upon request.

f. MARKING - Each portable tank must be plainly marked "DOT-E 12130" on both sides near the middle, in letters at least two inches high on a contrasting background.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo vessel.

10. MODAL REQUIREMENTS: A current copy of this exemption must be carried aboard each cargo vessel or motor vehicle used to transport packages covered by this exemption.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this exemption and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

    - All terms and conditions prescribed in this exemption and the Hazardous Materials Regulations, Parts 171-180.
    - Registration required by § 107.601 et seq., when applicable.

    Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this exemption must receive training on the requirements and conditions of this exemption in addition to the training required by §§ 172.700 through 172.704.

    No person may use or apply this exemption, including display of its number, when this exemption has expired or is otherwise no longer in effect.

12. REPORTING REQUIREMENTS: The carrier is required to report any incident involving loss of packaging contents or packaging failure to the Associate Administrator for Hazardous Materials Safety (AAHMS) as soon as practicable. (Sections 171.15 and 171.16 apply to any activity undertaken under the authority of this exemption.) In addition, the holder(s) of this exemption must also inform the AAHMS, in writing, as soon as practicable of any incidents involving the package and shipments made under this exemption.

Issued in Washington, D.C.

MAR 16 2001

Robert A. McGuire
for Associate Administrator for
Hazardous Materials Safety

(DATE)

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Research and Special Programs Administration, Department of Transportation, Washington, D.C. 20590. Attention: DHM-31.

The original of this exemption is on file at the above office. Photo reproductions and legible reductions of this exemption are permitted. Any alteration of this exemption is prohibited.

Copies of exemptions may be obtained from the AAHMS, U.S. Department of Transportation, 400 7th Street, S.W., Washington, DC 20590-0001, Attention: Records Center, 202-366-5046.

PO: PTOlson/sln